No Collaboration for any questions.

**Exercise 1:**

1.

**A computer screen shot of text

Description automatically generated**

**A graph of a wave

Description automatically generated**

2.

A computer screen shot of a program

Description automatically generated

A graph of a sound wave

Description automatically generated

Despite a difference in amplitude, as the amplitude of the Bit-Conversion is unimportant, the phase data is relatively well preserved.

**Exercise 2.**

1.

A screen shot of a computer program

Description automatically generated

A graph with a line

Description automatically generated

2.

A screen shot of a computer program

Description automatically generated

A graph of a frequency

Description automatically generated

3.

A screen shot of a computer code

Description automatically generated

A graph of a frequency

Description automatically generated

4.A black screen with white text

Description automatically generated

A graph of a graph

Description automatically generated with medium confidence

The effect of detrending and applying a Hann window to the data is such that the amplitude of the main mode is mostly preserved but the amplitude of several smaller modes are not. The processed data still retains peaks at some of the additional minor modes, but they are smaller compared to the original data. Though it is also possible that these modes were the result of noise in the original data anyway and so the processing method was successful in eliminating them.

5.

A screen shot of a computer program

Description automatically generated

A graph of a data

Description automatically generated with medium confidence